AMENDMENTS TO THE CLAIMS

Upon entry of this Amendment, the following list of claims will replace all prior versions and listing of claims in the pending application. Please amend claims 2, 18-19 and 21-23. Please cancel claims 6-17 without prejudice or disclaimer of the subject matter therein.

Claim 1 (Cancelled).

2.   (Currently Amended) The vehicle controller of claim 23, wherein a program for deleting the ~~first~~ security ~~data~~ function and writing the new security ~~data~~ function is stored in a non-rewritable memory.

3.   (Previously Presented) The vehicle controller of claim 23, wherein an anti-theft system is connected to the vehicle controller; and
        wherein rewriting to the rewritable memory is permitted if the anti-theft system permits an operation as to the vehicle.

4.   (Previously Presented) The vehicle controller of claim 23, wherein the rewritable memory is implemented in any form of a flash memory, EPROM and EEPROM.

5.   (Original) The vehicle controller of claim 2, wherein the rewritable memory and the non-rewritable memory are implemented in a single memory.

Claims 6-17 (Cancelled).

18.   (Currently Amended) A method for rewriting data stored in a rewritable memory in a ~~the~~ vehicle controller, the method comprising;
        receiving a result of a second security function expressible as an algebraic equation ~~new security data transferred~~ from an external rewriting device in communication with ~~to~~ the vehicle controller,
        deleting at the vehicle controller a first security function expressible as an algebraic equation ~~data~~ stored in the rewritable memory,

determining whether rewriting to the rewritable memory is permitted by the external rewriting device using a result of the first security function ~~the first security data being used to determine whether rewriting to the rewritable memory is permitted~~, and

if permitted, writing a third security function expressible as an algebraic equation ~~the new security data~~ into the rewritable memory,

wherein the third security function is different from the first security function.

19. (Currently Amended) The method of claim 18, the deleting the first security function ~~data~~ and the writing the ~~new security data~~ third security function are performed by a program stored in a non-rewritable memory mounted on the vehicle controller.

20. (Original) The method of claim 18, wherein an anti-theft system is connected to the vehicle controller, and

wherein rewriting to the rewritable memory is permitted if the anti-theft system permits an operation as to the vehicle.

21. (Currently Amended) The method of claim 18, wherein the external rewriting device stores the second security function ~~data~~; and

wherein the determination of the permission for rewriting to the rewritable memory comprising:

comparing the first security function ~~data~~ with the second security function ~~data~~ transferred from the rewriting device;

permitting rewriting to the rewritable memory if the first security function ~~data~~ matches the second security function ~~data~~.

22. (Currently Amended) The method of claim 21, wherein the first security function ~~data~~ and the second security function ~~data~~ have equivalent expressions;

wherein the determination of the permission for rewriting to the rewritable memory comprising:

calculating a first function value for a number based on the function of the first security data in the vehicle controller;

calculating a second function value for the number based on the function of the second security data in the rewriting device;

comparing the first function value with the second function value; and

permitting the rewriting device to rewrite to the rewritable memory if the first function value is equal to the second function value.

23.   (Currently Amended) A vehicle controller comprising,

a rewritable memory configured to store a security function expressible as a first algebraic equation used to authenticate an external rewriting device to determine whether rewriting to the rewritable memory by the external rewriting device is permitted;

a controller configured to initiate an authentication process to authenticate the external rewriting device by comparing a result of using the security function with a security feature of the external rewriting device in response to a request from the external rewriting device to rewrite data held by the rewritable memory and upon authenticating the external rewriting device to delete the security function stored in the rewritable memory and to write a new security function into the rewritable memory; and

an interface configured to receive and transmit one or more signals between the controller and the external rewriting device,

wherein the new security function is different from the deleted security function.

24.   (Previously Presented) A memory rewriting system for a vehicle controller comprising:

a vehicle controller comprising a rewritable memory, the rewritable memory storing second security data; and

a rewriting device for storing first security data,

wherein the vehicle controller is configured to;

determine whether there is a predetermined relationship between the first security data received from the rewriting device and the second security data stored in the rewritable memory;

release a security feature that prevents the rewritable memory from being rewritten if it is determined that there is the predetermined relationship therebetween;

delete the second security data after release of the security feature; and

write third security data received from the rewriting device, different from the first security data, into the rewritable memory,

the rewriting device being suitable for additionally storing the third security data.